REMARKS

Claims 1-12 are pending in the application. Claim 5 has been cancelled by this amendment. Therefore, claims 1-4 and 6-12 are at issue.

Claim 1 has been amended to recite that the nitrogenous polymer has a weight average molecular weight of 100,000 to 500,000 daltons, and has 7.5 to 15 mol/kg of protonatable nitrogen atoms. Support for the amendment to claim 1 can be found in original claims 1 and 5, and in the English-language specification at page 6, lines 33-35, page 3, lines 2-6, and page 25, Table 1 (i.e., 7.5 mol/kg protonatable nitrogen atoms).

Claims 1-6 and 8-12 stand rejected under 35 U.S.C. §102(b) as being anticipated by Torii et al. U.S. Patent Publication No. 2003/0069359 ('359 publication). Claim 7 stands rejected under 35 U.S.C. §103 as being obvious over the '359 publication in view of Nagasuna et al. U.S. Patent Publication No. 2004/0019342 ('342 publication). In view of the amendments to the claims, and for the reasons set forth below, it is submitted that these rejections should be withdrawn.

The present claims recite a water absorbent polymer comprising particles of a water-absorbent polymer and a nitrogenous polymer having (a) a high molecular weight of 100,000 to 500,000 daltons and (b) a moderate protonatable nitrogen atom content of 7.5 to 15 mol/kg.

The '359 publication discloses a water-absorbing agent obtained by blending water-absorbent particles (A) and a cationic polymer (B). The '359 publication discloses a cationic polymer having a weight-average molecular weight of not less than 2,000, and preferably not less than 5,000, or 10,000. See '359 publication, paragraph [0157]. The cited reference provides no upper limit for the molecular weight of the cationic polymer. The highest molecular weight for the cationic polymer disclosed in the '359 publication is 70,000. See '359 publication, paragraph [0313], Example 5.

In addition, the '359 publication further teaches a cation density, e.g., protonatable nitrogen atoms, of not less than 2 mol/kg, and preferably not less than 4 mol/kg or 6 mol/kg. See '359 publication, paragraph [0159]. In the examples, the '359 publication

discloses a low cation density, e.g., Example 10 using CATIOFAST PR8106 of cation density 6.1 mol/kg[1]. Also see Examples 6, 9, and 11. Example 5 discloses a cationic polymer having a high cation density of 23 mmol/g. Example 4 discloses a polymer having a cation density of 11 mol/g, however the polymer is polyallylamine of weight average molecular weight 10,000, which is far outside the presently recited molecular weight range for the nitrogenous polymer.

As stated in the MPEP at §2131:

> "TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM
>
> 'A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)...'The identical invention must be shown in as complete detail as is contained in the ... claim.' *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)."

In addition, MPEP §2131.03 II. states:

> "PRIOR ART WHICH TEACHES A RANGE WITHIN, OVERLAPPING, OR TOUCHING THE CLAIMED RANGE ANTICIPATES IF THE PRIOR ART RANGE DISCLOSES THE CLAIMED RANGE WITH "SUFFICIENT SPECIFICITY"
>
> When the prior art discloses a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are

[1] The '539 publication, in the examples, use mol/g for the cation density. In view of the disclosure at paragraph [0159], mol/g appears to be in error and should be mmol/g or mol/kg. If the values in the examples are in fact mol/g, the cation density is powers of ten different from the protonatable nitrogen atom content recited in the claims.

> directed to a narrow range, the reference teaches a broad range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious. The question of "sufficient specificity" is similar to that of "clearly envisaging" a species from a generic teaching. See MPEP § 2131.02. A 35 U.S.C. 102/ 103 combination rejection is permitted if it is unclear if the reference teaches the range with "sufficient specificity." The examiner must, in this case, provide reasons for anticipation as well as a motivational statement regarding obviousness. *Ex parte Lee*, 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board). For a discussion of the obviousness of ranges see MPEP § 2144.05."

Recent CAFC decisions support the reasoning stated in MPEP §2131.03 II. "Anticipation requires a showing that each limitation of a claim is found in a single reference, either expressly or inherently." *Atofina v. Great Lakes Chemical Corp.*, 441 F.3d 991, 999 (Fed. Cir. 2006).

When a claim recites a limitation as a range of numerical values, a reference must describe the range with sufficiently specificity to anticipate. *Atofina*, 441 F.3d at 999-1000. Disclosed ranges that only slightly overlap a claimed range do not describe the range with sufficient specificity. See *id.* (reversing findings of anticipation on the basis that (1) a disclosed temperature range of 150 to 350°C only slightly overlapped a claimed range of 330 to 450°C, and (2) a disclosed concentration range of 0.001 to 1.0% only slightly overlapped a claimed range of 0.1 to 5.0%); *Ex parte Hayashi*, 2007 WL 1874815, *5-6 (B.P.A.I. 2007) Appeal No. 2007-0665) (reversing an anticipation rejection, finding that a disclosed thickness range of about 100 nm to 500 nm, absent any specific examples less than 100 nm, failed to describe a claimed thickness range of less than 100 nm with sufficient specificity). Further, a reference disclosing a range that is very close to (but which does not overlap or touch) the claimed range does not anticipate the claimed range. MPEP § 2131.03(II) (8th ed., Rev. 6, Sept. 2007) (citing *Titanium Metals Corp. v. Banner*, 778 F.2d 775 (Fed. Cir. 1985))).

The disclosure of a genus in the prior art is not necessarily a disclosure of every species that is a member of the disclosed genus. *Atofina*, 441 F.3d at 999. In particular, the disclosure of a range does not constitute a specific disclosure of the endpoints of that range. See *id.* at 1000 (noting that a disclosed range of 150 to 350°C was neither a

disclosure of 150°C nor 350°C); *see also* Hayashi at *6 (finding it irrelevant that the lower limit of "about 100 nm" for the disclosed thickness range could be interpreted to include thicknesses within the recited range of "less than 100 nm") *Ex parte Hayes*, 2007 WL 49702, *9 (B.P.A.I. 2007) (Appeal No. 2006-0990) (noting that end points of a disclosed range do not reflect "data points" for anticipation determination).

For the reasons set forth herein, it is submitted that the '359 publication fails to anticipate present claims 1-4 and 6-12 under 35 U.S.C. §102(b), and that claims 1-4 and 6-12 would not have been obvious over the '359 publication under 35 U.S.C. §103.

To support an anticipation rejection under 35 U.S.C. §102(b), the '359 publication *must* teach a nitrogenous polymer having a weight average molecular weight of 100,000 to 500,000 *and* 7.5 to 15 mol/kg of a protonatable nitrogen atom. The '359 publication however fails to teach each and every element of the claims with sufficient specificity to support an anticipation rejection.

The cited reference fails to teach a nitrogenous polymer having a high molecular weight, as claimed, with sufficient specificity to sustain a rejection under 35 U.S.C. §102(b). In addition to failing to sufficiently disclose a high molecular weight nitrogenous polymer with sufficient specificity, the '359 publication also fails to teach a range of protonable nitrogen atoms of 7.5 to 15 mol/kg with sufficient specificity to support the anticipation rejection under 35 U.S.C. §102(b).

First, as stated above, the '359 publication discloses *no* upper limit for the molecular weight of the cationic polymer. The reference therefore discloses a cationic polymer having a molecular weight of "not less than 2000" (paragraph [0157]) up to an infinite molecular weight. The highest molecular weight specifically disclosed in an example of the '359 publication is 70,000.

The present claims recite a relatively narrow molecular weight range of 100,000 to 500,000 daltons with specificity, as opposed to the broad, limitless range of the '359 publication.

As set forth in the MPEP §2131, the present claims are directed to a narrow range within the wide range of the reference, and wherein the reference fails to disclose a specific example within the claimed range. It is submitted therefore that the '359 publication fails to disclose the claimed subject matter with sufficient specificity to constitute an anticipation under 35 U.S.C. §103(b).

In addition, the present claims recite a narrow molecular weight range in *combination with* a specific range of 7.5 to 15 mol/kg of protonatable nitrogen atoms. The '359 publication places no to little importance on the cationic density of the cationic polymer, merely stating that the density is "not less than" 2 mol/kg. The examples of the '359 publication have a cation density that is less than or greater than the claimed range for protonatable nitrogen atoms.

Therefore, like the molecular weight disclosure, the '359 publication discloses a wide range for the cation density. The present claims recite a narrow range within the wide range of the reference, and the reference fails to disclose a specific example within the claimed range. It is submitted therefore that this is a *second* reason that the '359 publication fails to disclose the claimed subject matter with sufficient specificity to constitute an anticipation under 35 U.S.C. §102(b).

In addition to the *individual* reasons that the '359 publication does not anticipate the present claims, the claimed *combination* of these reasons, i.e., a specific molecular weight *and* a specific range of protonatable nitrogen atoms, provides a third reason why the '359 publication fails to anticipate the present claims. The '359 patent clearly fails to teach a nitrogenous polymer having a molecular weight of 100,000 to 500,000 *and* 7.5 to 15 mol/kg protonatable nitrogen atoms with sufficient specificity to anticipate the present claims.

To further demonstrate that the '359 publication fails to anticipate claims 1-4, 6, and 8-12, and that the '359 publication fails to render those claims obvious under 35 U.S.C. §103, a presently claimed water absorbent exhibits unexpected benefits.

The claimed combination of molecular weight and protonatable nitrogen atoms of the nitrogenous polymer employed in the water absorbent of claim 1 leads to a superior performance profile. It surprisingly was found that a high weight average molecular weight in combination with a medium content of protonatable nitrogen atoms leads to water absorbents that demonstrate a very high fluid transmission performance or permeability (saline flow conductivity, SFC) *and* a high wet strength (ball burst strength, BBS). These properties are unexpected in view of the '359 publication.

The specification, in Table 1 at page 25, contains a present water absorbent comprising a nitrogenous polymer with 7.5 or 15 mol/kg of protonatable nitrogen atoms and a weight average molecular weight of 400,000 daltons (see specification, page 23, lines 36-42). The present examples clearly demonstrate that a high weight average molecular weight *in combination with* a medium content of protonatable nitrogen atoms (7.5 to 15 mol/kg) leads to water absorbents which have a very high SFC and a high BBS. Table 1, page 25 of the specification, shows a dramatic increase in SFC when the content of protonatable nitrogen atoms is raised to 7.5 (see Comparative Examples 4 and 5 and Example 3). The same results are observed for BBS at 30 minutes, as well as BBS at 16 hours. Further, Table 1 shows that SFC decreases when the content of protonatable nitrogen atoms is raised above 15 (see Example 2 and Comparative Example 1). The same results are observed for BBS at 30 minutes. Table 2, on page 26 of the specification, shows that a high weight average molecular weight in combination with a protonatable nitrogen atom content of 7.5 mol/kg provides water absorbents that combine a high SFC with a high BBS, and also have good CRC values and AUL values (Examples 8, 9 and 10). See specification, page 24, lines 6-8. The inventive examples also demonstrate an improved storage stability. See specification, page 24, lines 10-27 and Table 2. The presently claimed water absorbents therefore exhibit unexpected results with respect to fluid absorption properties and storage stability.

The present claims are closely tailored to be based on the molecular weight of the nitrogenous polymer *and* the amount of protonatable nitrogen atoms, wherein the water absorbents demonstrate unexpected results with respect to performance in absorbing fluids and storage stability. The '359 publication fails to disclose the presently claimed water absorbent with any specificity. The '359 publication also provides no direction, guidance, or

apparent reason for a person skilled in the art of SAPs to select the narrow range of molecular weights *and* protonatable nitrogen atoms for the nitrogenous polymers with any reasonable expectation of providing a water absorbent having unexpectedly improved properties over water-absorbents prepared using cationic polymer broadly disclosed in the '359 publication.

In view of the differences between the present claims and the disclosure of the '359 publication, it is submitted that differences exist between the present claims and the '359 publication, and that the rejection under 35 U.S.C. §102(b) should be withdrawn. It is further submitted that claims 1-4, 6, and 8-12 would not have been obvious to a person skilled in the art under 35 U.S.C. §103.

Claim 7 stands rejected under 35 U.S.C. §103 as being obvious over a combination of the '359 publication and Nagasuma et al. U.S. Patent Publication 2004/0019342 ('342 publication). Applicants traverse this rejection.

In particular, claim 7 recites a preferred embodiment of the present invention. Applicants do not rely solely upon the inclusion of a water-insoluble salt for patentability, but rely upon the inclusion of a water-insoluble salt *and* all of the features of claim 1 from which claim 7 depends.

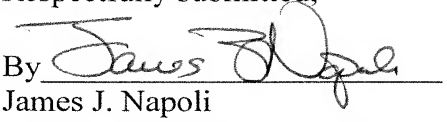
Accordingly, applicants submit that claim 7 is patentable over a combination of the '359 and '342 publications for the same reasons that claims 1-4, 6, and 8-12 are patentable over the '359 publication. It should be noted that the '342 publication adds nothing to the '359 publication with respect to the patentability of claims 1-4, 6, and 8-12. The rejection of claim 7 over a combination of the '359 and '342 publication therefore should be withdrawn.

It is submitted that the claims are in a form and scope for allowance. An early and favorable action on the merits is respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form in an effort to advance this application toward allowance, the examiner is urged to telephone the undersigned at the indicated number.

Dated: December 19, 2007

Respectfully submitted,

By 

James J. Napoli
Registration No.: 32,361
MARSHALL, GERSTEIN & BORUN LLP
233 S. Wacker Drive, Suite 6300
Sears Tower
Chicago, Illinois 60606-6357
(312) 474-6300
Attorney for Applicant